Peter Kozelka/R9/USEPA/US
06/04/2007 04:32 PM

To Karen Irwin/R9/USEPA/US@EPA
cc
bcc
Subject Fw: grant files -- pls modify to be consistent with extension into FY08

History: This message has been replied to.

----- Forwarded by Peter Kozelka/R9/USEPA/US on 06/04/2007 04:32 PM -----

"Chris R. Varga" <Varga.Chris@azdeq.gov>
06/04/2007 03:54 PM

To Peter Kozelka/R9/USEPA/US@EPA
cc "Mahota J. Hadley" <Hadley.Mahota@azdeq.gov>
Subject RE: grant files -- pls modify to be consistent with extension into FY08

Peter,
The Queen Creek revision is attached in support of the grant extension request. Changes to the original language are in bold. We will be getting to Lake Mary this week. Is this what you had in mind?

Chris Varga, Manager
Surface Water Section
ADEQ

104b3 queen creek. 6-4-07.doc

Arizona Department of Environmental Quality
Water Quality Cooperative Agreements/Grants Proposal
US EPA Region 9
Submittal in FY2005
Amendment #1 (05/30/07)

Name of Project: Queen Creek Copper TMDL Investigation

Contact Information: Joan Card, Director
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Is this a continuation of a previously funded project?: **Yes. This is a request for continuation of a previously funded project-EPA grant #CP-969416-01-0 with a project start date of 7/01/05. This is an amendment to the original grant to extend certain timelines by one year due to insufficient precipitation in the watershed. Acquisition of sufficient data, as detailed in the sample and analysis plan (SAP), is critical to the quality of the intended project deliverables.**

ADEQ has made as much progress as can be made in light of the continuing drought conditions, including; development of a comprehensive SAP; procurement and deployment of automatic samplers, stream stage recorders and weather monitoring instruments; begun development of a dynamic watershed model; and hosted a public meeting on the project.

Predictions by the NOAA Climate Prediction Center last summer and fall calling for above normal precipitation (El Nino) weather patterns this past winter did not come to fruition. In fact precipitation was below normal for the period December 2006 through March 2007. Normal winter precipitation is 8.13" whereas ADEQ recorded 6.29". The precipitation events that did occur were not sufficient in duration, depth and intensity to cause adequate stream flow for synoptic sampling of Queen Creek and its tributaries. This extension would hopefully allow additional time for storms of adequate size to occur in the Queen Creek watershed. ADEQ is fully prepared to respond and monitor the next storm of adequate magnitude.

Original Proposed Budget:

	EPA Funding
CONTRACTUAL	
Professional	
Modeling	$ 75,000
Analytical	
Water samples	$ 42,850
Sediment samples	$ 12,300
SUPPLIES	$ 11,700

Proposed Federal Funding:
Dollar amount requested from EPA: $ 141,850

We are also requesting a budget revision as follows, with no increase in the overall award. This is requested because ADEQ currently has staff available with the necessary expertise to do the modeling in-house versus retaining a 3rd party contractor. Some contract funds are retained for analytical work and 3rd party technical support/peer review of the modeling efforts.

Line Item	Current budget	Revision	New Budget
Personnel	---	**50,152**	**50,152**
Fringe Benefits	---	**16,550**	**16,550**
Supplies	**11,700**	**150**	**11,850**
Contracts	**130,150**	**(100,150)**	**30,000**
Indirect	---	**33,298**	**33,298**
Total			**141,850**

Cost Effectiveness
The timing of this TMDL investigation is good as a mining interest is planning to start mining on a copper-rich orebody that underlies the Queen Creek watershed. The mining interest has already met with the Arizona Pollution Discharge Elimination System (AZPDES) Unit regarding a permit to discharge a considerable volume of water into Queen Creek. While a potential economic boon to the area, the copper listings on Queen Creek could severely hamper the effort. The TMDL Unit and the AZPDES Unit will coordinate efforts to ensure that water quality standards are protected. Performing simultaneous copper TMDL investigations on the two listed segments of Queen Creek will lead to a more complete understanding of loading and effective implementation efforts that need to be taken. Development of a watershed loading model will create a tool that can be used in future assessments of implementation effectiveness.

Project Deliverables
The proposed project will result in the submittal of the Model Development report which will include existing loads, load capacities, draft allocations, and draft TMDLs for copper on the two listed segments within the Queen Creek watershed. ADEQ is committed to develop a TMDL report from the results in the Model Development report because these waterbodies are currently listed and because of the proposed mining operation. ADEQ is committed to developing a TMDL implementation plan with stakeholders.

Regional Setting
Queen Creek originates in the Superstition mountains in the Tonto National Forest, four miles north of Superior, AZ. It flows south through Queen Creek Canyon, continues through the town of Superior to the **BHP Billiton** Superior Mine NPDES permitted Waste Water Treatment Plant (WWTP) and then on to Potts Canyon. Previous sampling events have lead to the listing of the two segments of Queen Creek for copper exceedances: headwaters to Superior Mine WWTP (HUC# AZ05050100-014A) in 2002 and Superior Mine WWTP to Potts Canyon (HUC# AZ05050100-014B) in 2004.

Copper mining within the Queen Creek watershed began during the early 1870s. Magma Smelter, owned today by BHP, began smelter operation in 1924 and continued until the early 1970s. All milling

operations have ceased. Seven tailings piles located in the vicinity of Superior have been identified as a source of heavy metal contamination in the Queen Creek drainage. Sediment and runoff from the tailing piles enters Queen Creek by way of an unnamed tributary. Tailings cover 207 acres and the total disturbed acreage from Superior Mine is approximately 512 acres. Copper, gold, limestone, silver, and perlite have been mined within the Queen Creek watershed. Currently, two mines continue to operate: OMYA Inc., an open-pit limestone mine; and, Harborlite Corporation, an open-pit perlite mine. Land uses include mineral exploration and development, grazing, historic preservation, and water resource development.

Project Description

Initial field work will involve field reconnaissance and historic records research. These activities will provide information about current environmental conditions, likely sources of copper loading, and optimal sites for sample collection. Reconnaissance and records research will commence in April 2005 before this scope of work starts. **As of January 2006,** a Sample and Analysis Plan (SAP) **has been** developed to ensure that a credible body of data is collected which will support determination of the spatial and seasonal extent of impairment; source and critical condition identification; determination of loads, including anthropogenic and natural sources; and load allocation and TMDL calculation.

Monitoring to inform development of the SAP **was completed in January 2006**. **Beginning** in July **2006** monitoring in support of the SAP **was** started. Because the listed portions of Queen Creek are intermittent, **six** autosamplers and accompanying stream stage loggers will be necessary to assist with sample collection during storm runoff events. The austosamplers and loggers will be stationed along Queen Creek to collect samples and measure flow stage at different times throughout the hydrograph. A weather station **has been located in the nearby Pinto Creek** watershed to collect data that can be used in conjunction with **newly deployed rain gages** in precipitation modeling.

It is anticipated that a dynamic watershed loading model will be constructed to assist with load allocations, TMDL calculation, and scenario runs. **ADEQ will prepare a Data Summary report, a Model Selection report, develop and run the model, prepare a Model Development report, and participate in two public meetings. A contractor will be selected to perform a peer review of the model report.** Two final TMDLs will be submitted to EPA following an extensive public comment period. Stakeholders will be identified and kept apprised of the project's progress as throughout this investigation.

Outcome/Result Tracking and Reporting:

The progress of the project will be tracked by completion the following tasks.

TASK #1 – CONDUCT MONITORING

Monitoring will include water column and sediment sampling. Water column samples will target collection at different flows, including baseflow and storm runoff, to measure copper loading as it responds to changes in the hydrograph. Spring samples will also be collected. Sediment samples will be collected to enhance the understanding of source contribution. Water column and sediment sample collection will be scheduled to allow for measurement of seasonal differences. Samples will be analyzed for inorganic parameters using traditional and ultra clean methods. Additional sampling techniques will be introduced as necessary.

TASK #2 – PURCHASE AND INSTALL AUTOMATED DEVICES

Construction and installation of the autosamplers, stage loggers and weather station has been completed. The weather station and stage loggers will log data at fifteen minute intervals and require monthly maintenance and data downloads. Autosamplers will be **co-located** with stage loggers and

programmed to collect samples **at timed intervals during the storm event**. All deployed equipment will be marked with state property labels and secured with padlocks and cables.

TASK #3 - **PREPARE WATER QUALITY MODEL**

It is anticipated that a dynamic watershed loading and water quality model is necessary to effectively identify the sources, mechanism(s) for loading, and allocate the loads needed for TMDL calculations. The model runs may include runs at different flow events and runs which estimate the effect of proposed implementation strategies. **As part of the modeling process, ADEQ intends to contract a third-party consultant to peer review the modeling report.**

TASK #4 –COMMUNICATE RESULTS

ADEQ will activate the stakeholder process early in this project with much of the public outreach/participation process being handled by the Watershed Management Unit. The principal stakeholders include: BHP, Arizona State Land Department, U.S. Bureau of Land Management, Friends of Queen Creek, private land owners, and interested parties. A stakeholder meeting will be held after the **ADEQ** has prepared the Data Summary and Model Selection reports. At this meeting, ADEQ will discuss the available dataset and explain possible modeling approaches. Another stakeholder meeting will occur after completion of the Model Development report. At this meeting, ADEQ will discuss the development of the model including assumptions, calibration, validation, and results from scenario runs. All public meetings will be noticed in a newspaper of general circulation local to Queen Creek.

TASK #5 – SUBMIT DRAFT MODELING REPORT TO EPA
ADEQ will submit a copy of the Model Development report to the EPA.

Projected tasks, deliverables, and targeted completion dates

Task	Deliverable	Target Date
#1- Conduct Watershed Monitoring	Data collection	April 2005* - **March 2008**
#2- Purchase and Install Automated Devices	**Purchase and Installment of Automated Devices**	**Actual –January 2007**
#3- **Prepare Dynamic Watershed Model**	**Draft Model Report**	**May 2008**
#4- Communicate Results	Data Summary Meeting Model Report Meeting	**January 2008** **May 2008**
#5- Submit Modeling Report to EPA	Modeling Report	**June 2008**

- This task will start before the proposed scope commences.

Outreach, Communication and Information Transfer:
A major component of the ADEQ TMDL program is stakeholder involvement. Primary stakeholders include BHP, Bureau of Land Management, and Arizona State Land Department. Stakeholders will be involved throughout the TMDL process beginning the reconnaissance and records research phase. As previously mentioned, at least two public meetings will be held to communicate with stakeholders. **ADEQ already hosted one public meeting regarding the project in January 2007.** An additional meeting, to discuss the TMDL report, is likely and outside of the scope of this proposal. All public meetings will be noticed in a newspaper of general circulation near to Queen Creek. Meeting notices will also be posted on ADEQ's website where the current status of the TMDL process and key deliverables are posted for the public's review.

After this scope is completed, ADEQ will follow a lengthy public notice period as prescribed in Arizona Revised Statue §49-231. This process includes running an article regarding the availability of the TMDL in a newspaper of general circulation and 30-day public comment period following the notice. After completion of the 30-day notice, the loads and allocations and responses to comments received during the 30-day comment period will be posted in the *Arizona Administrative Register*. After this public notice phase is completed, the TMDL will be sent to the EPA for approval. The approved TMDL will be posted the ADEQ's website.

ADEQ watershed coordinators will work closely with stakeholders to develop implementation plan that is will result in water quality standards being attained and maintained, is technically feasible, and cost effective. ADEQ watershed coordinators will assist stakeholders with identifying possible funding sources.